CDM
5400 Glenwood Avenue, Suite 300
Raleigh, North Carolina 27612
tel: 919 787-5620
fax: 919 781-5730

April 14, 2008

Mr. Allen Gaither
Regional Engineer
North Carolina Department of Environment and Natural Resources
Division of Waste Management, Solid Waste Section
2090 US Highway 70
Swannanoa, North Carolina 28778

Subject: Buncombe County, North Carolina
Buncombe County MSWLF – Permit No. 11-07
Response to Comments

Dear Mr. Gaither:

On behalf of Buncombe County, Camp, Dresser & McKee (CDM) is providing herewith responses to your letter dated December 10, 2007. For ease of review, CDM has provided below the review comment followed by our response in italics.

General

- Should there be another breakout and leachate were to collect in a sediment pond or other surface waters, the facility should analyze the contaminated water for the Appendix 1 list of constituents plus the following parameter; BOD_5, COD, phosphate, nitrate, sulfate. The sample results will be used to determine whether the pond or surface waters are impacted by the release.

  Section 16.5.3 has been added to the attached plan identifying this requirement.

Operational Plan

- Each pump stations should be equipped with operational visual and audible high level alarms.

  Each pump station is equipped with operation visual and audible high level alarms. Section 16.1.1 has been modified to include this information.

- Each pump station should be given a numerical identification.

Each pump station is provided with a numerical identification at the pump control panel. Section 16.1.1 has been modified to include this information.

- Each pump station should be inspected a minimum of weekly, including:
  - Alarms – to ensure they are properly operating.
  - Pumps- to ensure they are properly operating.

Each pump station will be inspected weekly. The minimum inspection requirements are provided in Section 16.2.

- A general visual inspection of the LCS should occur weekly and immediately after each ½ inch rainfall event, including;
  - Leaks
  - Breakouts
  - Pipe failures

Section 16.2 has been modified to include weekly inspection for leaks, breakouts and pipe failures, as well as inspection for breakouts following ½ inch rainfall or greater.

- The leachate storage pond level should be inspected weekly, at a minimum. The Solid Waste Section, Asheville Regional Office should be notified immediately should the minimum freeboard level be exceeded.

Section 16.2 has been modified to include storage pond inspection on a weekly basis and notification of the Solid Waste Section in the event the minimum freeboard is encroached.

- All inspections should be documented by: inspector, location, date, time, items inspected, and comments.

Section 16.2 requires the operator to document and record all inspections and provides sample inspection forms.

- All LCS valves should be exercised annually and repaired and/or replaced as needed.

This information is provided in Section 16.1.3.

- Flow meters should be calibrated annually.

  Flow meter operation will be validated by comparing the recorded flows at each individual sump to the leachate pond volume and leachate disposal records. Flow meters not properly operating will be removed and replaced.

- Electronic level controls must be operational at all times and calibrated annually.

  Leachate levels will be monitored weekly as indicated in Section 16.2. Electronic level controls will be calibrated annually as provided in Section 16.1.3.

- The Ops Plan calls for pump oil replacement; the question was raised as to whether this style pump is in use at the facility.

  This has been removed from the attached plan. The leachate pumps do not require oil replacement.

- The facility should acquire a portable generator that can be kept on site for emergencies, that is capable of supplying adequate power to operate any given pump station. Each pump station should be equipped with a functional receptacle for quick generator connection.

  The County is in the process of acquiring a generator to be maintained on-site and used in the event of power outages. All control panels are equipped with a functional receptacle for quick generator connection. The connections will be modified to connect to the generator acquired, if the connections are not already compatible.

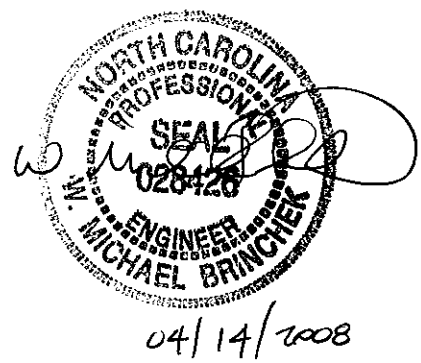
- All leachate collection lines should be cleaned at least once per year. Note: - the Division may allow leachate collection line cleaning once every two years if; the facility has continuous flow monitoring and demonstrates that the leachate collection lines are clear and functional based on at least three consecutive annual cleanings. Remote camera inspections of the leachate collection lines should occur, following initial cleaning, at least once every five years thereafter and following the clearing blockages.

  Leachate collection line cleaning and videoing is included in Section 16.1.3.

The above comments and response to comments have been discussed with and reviewed by the County. CDM has also attached herewith, a copy of the revised Operation Plan, which incorporates the above comments. Should you have any questions, during your review of this plan, please contact me at your earliest convenience.

Very truly yours,

W. Michael Brinchek
Camp Dresser & McKee



cc: J. Mears, BCSWMF
D. Aja, NCDENR DWM
J. Wiseman, CDM
C. Gabel, CDM
M. Colone, CDM
K. Yang, CDM

Section 16
Leachate Management Plan

16.1 Maintenance of the Leachate Collection and Storage System

16.1.1 System Design

The leachate collection pipes within the proposed municipal solid waste landfill (MSWLF) unit will convey collected leachate by gravity to a sump area, where a submersible pump will pump leachate to a pump station located outside the cell. Cleanouts are located at the upstream ends of the collection pipes, and at the sump area low point. From the pump stations, leachate will be pumped to the leachate storage pond adjacent to the southwest side of the MSWLF unit. Another pumping station at the pond will pump leachate through a flow metering vault, to a truck loading station, where tank trucks will be filled to haul leachate to the Metropolitan Sewerage District (MSD) wastewater treatment plant. The pond will serve as an equalization basin to absorb peak flows coming from the pump stations. Depending upon the leachate quality, and the surcharge rates for high nutrient concentrations, pretreatment facilities may be required at the leachate pond prior to discharge to the sewer system. A pretreatment plant will be added if the regulated nutrients exceed surcharge levels, as monitored by periodic sampling results. All leachate removed from the holding pond will be flow monitored and recorded using a flow meter.

Each leachate pump station is provided with numerical identification at the leachate pump control panel. One pump control panel is provided for each submersible leachate pump station and is provided in a common enclosure. The control panel is programmed to respond to the liquid level sensor to automatically start and stop pumps in response to changes in liquid levels and to allow manual control of the sump when needed. Each control panel is equipped with visual and audible high level alarms programmed to activate when the leachate levels exceed one foot of head.

16.1.2 Storage Pond Inspection and Maintenance

Inspection of the storage pond will be made on an annual basis by County staff. Any stored leachate and sediment in the pond must be removed so that the pond bottom is visible. The inspector should verify that flows from the pump stations are not impeded, by inspecting flows at the junction manhole. Once flow is verified, the pump stations that transfer leachate to the pond should all be turned off. Then, the inspector should perform a thorough walkover of the pond bottom, surveying the protective layer for any signs of damage, such as cracks, tears, gouges, uplift, or soft spots. Observations should be recorded in the operating record and photographs should be taken of the areas of concern and also placed in the operating record.

If damage or potential problems are discovered, they should be reported to the facility supervisor so that repairs may be made as soon as possible. All repair activities

should be recorded in the operating record as well. The pond should be put back on-line as soon as possible, to minimize leachate storage time within the pump stations and cells.

16.1.3 Maintenance of the Leachate Collection System

The perforated leachate collection piping will be pressure cleaned and flushed annually to remove any accumulation of debris, sediment, or organic growth, which will be achieved by inserting a self-propelled, high pressure jetting system into the collection pipes by way of the clean-out ports. Remote camera inspections of the leachate collection lines shall also occur, following initial cleaning, and at least once every five years thereafter and following the clearing blockages.

The monitoring vault should also be visually inspected during routine monitoring, and each valve shall be manually operated to check for proper operation and control. The control panels shall be fully inspected at the same time, to ensure proper alarm operations, reset functions, and normal operations performance. Any components not properly functioning shall be promptly repaired or replaced.

16.2 Leachate Monitoring and Generation Records

16.2.1 Quantitative Monitoring

The leachate effluent line from the storage pond is designed with a flow meter to measure the amount of leachate being discharged from the landfill. In addition, each sump pump station is designed with a flow meter to measure the leachate discharge from each sump. The operator shall read and register the leachate flows on a weekly basis at the leachate effluent line and at each of the sump pump stations.

The information to be collected shall include the date, time, leachate quantity (in gallons), pump run time, leachate levels, and the name of the person taking measurements. Weekly measurements recorded at each sump pump station will be used to detect potential pump malfunction. While taking weekly sump readings the operator shall also record the leachate level within the leachate pond. Should the leachate pond minimum freeboard level of 12 inches be exceeded the North Carolina Department of Environment and Natural Resources, Division of Waste Management, Solid Waste Section (SWS) will be notified immediately.

16.2.2 Qualitative Monitoring

In addition to the above quantitative monitoring and recording requirements, the operator shall inspect each sump control panel on a weekly basis to ensure the proper operation of the audio and visual alarms. The operator shall also, on a weekly basis, visually observe the landfill sideslopes for leachate breakouts and the perimeter berm for staining, which would indicate a potential pipe failure. All exposed leachate piping shall also be monitored for leaks.

In addition to weekly observations, the operator shall, after substantial rainfall events equal to or exceeding ½ inch, observe the landfill sideslopes for leachate breakouts, leaks or pipe failures.

16.2.3 Record Keeping

All records shall be maintained at the landfill by the operator and made available to Solid Waste Section personnel for inspection when requested. A sample form to be used for recording leachate flows at the effluent is attached as Table 16-1. A sample form to be used for recording leachate flows at each sump pump station is attached as Table 16-2.

16.3 Leachate Quality Sampling

The County shall obtain a leachate sample as required by the receiving municipality in their pre-treatment permit. The sample shall be packaged in a watertight container, placed in an insulating storage box, and packed with ice. The package shall be express delivered to a certified laboratory to perform the required analytical tests. The results of the lab analyses shall be kept in the landfill operating records and made available to the receiving wastewater treatment plant staff as well as State regulatory personnel for their inspection. The County landfill operating staff will sample on a quarterly basis, which may become the required sampling frequency for the County for all parameters, after a period of time during which the leachate quality stabilizes. The results of any additional lab analyses shall also be kept in the landfill operating records.

Composite or grab samples shall be obtained at the leachate storage pond, and at any pretreatment facilities, if applicable.

Table 16-1
Buncombe County
Solid Waste Landfill
Leachate Management

Date:_____ **Weather:**_____

Time:_____ **Rainfall:**_____

	Cell 1	**Cell 2**	**Cell 3**	**Cell 4**	**Cell 5**	**Cell 6**
Level (inches)						
Total Pumped						
GPM						
Total Hours						
Alarm Sound						
Alarm Light						

PUMP OPERATIONS SUMMARY

Cell 1 Pumped _____ gal Ran _____ hrs _____ GPH _____ GPM

Cell 2 Pumped _____ gal Ran _____ hrs _____ GPH _____ GPM

Cell 3 Pumped _____ gal Ran _____ hrs _____ GPH _____ GPM

Cell 4 Pumped _____ gal Ran _____ hrs _____ GPH _____ GPM

Cell 5 Pumped _____ gal Ran _____ hrs _____ GPH _____ GPM

Cell 6 Pumped _____ gal Ran _____ hrs _____ GPH _____ GPM

Condensate Compressor hours _____ ran _____ hours

Leachate system visual inspection _____ After 0.5" rain_____

Leachate Pond level_____ inches

16.4 Leachate Disposal Approval

Leachate from the landfill will be pumped from the storage pond to the truck loading station, which will fill trucks used to haul the leachate to the MSD sanitary sewer system for final disposal. An approval letter from MSD stating that they will accept the landfill leachate will be included in the operating records. Any pretreatment requirements will be included in the Pretreatment Permit issued by MSD prior to landfill operations.

16.5 Leachate Management Contingency Plan

16.5.1 Leachate Sump Pump Station

Should a pump station not appear to be functioning properly, based upon weekly monitoring records, the pump will be removed and troubleshooted in accordance with manufacturer recommendations. If troubleshooting techniques do not provide a prompt resolution, one of the spare pumps located on-site will be installed in its place and necessary repairs will be made.

Should power be lost at the site the pumping station control panels are equipped with receptacles for a portable emergency generator, to operate the pumping stations until power is restored. A portable emergency generator will be available within 12 hours and used in the event of a power outage.

16.5.2 Leachate Storage

During periods when components of the leachate pond pump station are inoperative or down for maintenance, or when storm flows are extremely high, excessive leachate will be dealt with using either of two contingency plans.

The storage capacity of the leachate holding pond is approximately 1,000,000 gallons, when completely full to within 12 inches of the top of the pond liner. This will provide up to 17 days of storage during peak leachate flow periods, and about 69 days storage for average annual daily flows. If surface evaporation rates are considered, even longer storage periods can be achieved. This volume is also adequate to capture the leachate from the peak rainfall event from the five years of rainfall data used in the HELP model leachate projections (assuming several acres of open cell area with only the first solid waste lift installed) and still have reserve capacity for additional daily flows. Therefore, considerable storage capability is provided by the leachate pond for periods of unusually high precipitation or unusual operating conditions.

Should a period of substantial rainfall persist, and the leachate pond approach full stage, the pumping stations can be turned off. The leachate would be temporarily stored in the disposal cells until the level in the pond is adequately reduced. The cells would be monitored daily to ensure that overflow does not occur. If the storage pond encroaches to within 6 inches of the ponds 12-inch freeboard (18 inches from the top

of the pond liner), leachate hauling will be increased to a frequency adequate to deplete the leachate volume in the storage pond to an acceptable level.

Should power be lost at the site the pumping station control panel at the leachate pond is equipped with receptacles for a portable emergency generator, to operate the pumps long enough to control leachate flow volumes. A portable emergency generator will be available within twelve hours of a power outage.

16.5.3 Leachate Breakout

In the event of a breakout, leak or pipe failure, the County will immediately notify SWS and identify the areas contaminated by the breakout/leak/pipe failure, if any. Should leachate collect in a sediment pond or other surface waters, the County will analyze the contaminated water for the Appendix 1 list of constituents and BOD_5, COD, phosphate, nitrate and sulfate. The sample results will be forwarded to SWS and used to determine whether the pond or surface waters are impacted by the release.